

Application No.: 10/520,816

REMARKS

Solely in order to expedite prosecution, claims 16-20 have been canceled without prejudice/disclaimer to the subject matter embodied thereby, rendering the rejections thereagainst moot.

Claims 1, 6 and 11 are independent and stand rejected under 35 U.S.C. § 102(b) as being anticipated by Steiner et al. '273 to Steiner et al. ("Steiner"). This rejection is respectfully traversed for the following reasons.

Each of claims 1, 6 and 11 embody "at least a part of the trench is located in the same low dielectric constant film where the hole is formed." One exemplary embodiment of the present invention is shown, for example, in Figure 1 of Applicants' drawings in which trench 109 and hole 108 have parts located in the same low dielectric constant film 105. As previously argued, the hole 78 and trench 82 of Steiner are formed in different low dielectric constant films 18 and 42, respectively.

In the outstanding Office Action, the Examiner attempts to modify his interpretation of Steiner by now taking element 90 as the claimed "hole." This interpretation is not understood. Element 90 merely represents hole 78 and trench 82 *collectively*, whereas the Examiner appears to be interpreting element 90 and 82 as different elements in an attempt to maintain the rejection over Steiner. As expressly described in paragraph 27 of Steiner, the "dual-damascene opening 90 ... is a two-tiered opening that includes top portion 82 and bottom portion 78."

In order to clarify this distinction between the present invention and Steiner, the claims embody that "the hole is located below the trench" so as to clarify the differentiation therebetween. The only such relationship in Figure 6 of Steiner is that of elements 82 and 78, which as previously noted are located in different dielectric films.

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Moreover, the nitrogen-non-containing insulating film 30 is between the two different low dielectric constant films 18 and 42 (see Fig. 6), whereby the nitrogen-non-containing insulating film 30 is exposed on the inner surface of the hole 74 before the trench is formed (Fig. 5). Accordingly, Steiner is subject to the following drawbacks: when a chemically amplified resist is applied to the inside of the hole (see Fig. 5 of Steiner), an amine present in the nitrogen-containing insulating film 30, or a basic material derived from nitrogen in the nitrogen-containing insulating film 30, diffuses into the resist through the hole. Steiner is silent as to such drawbacks and therefore provides no motivation for modification to the disclosed structure. Indeed, even assuming a trench and hole were formed in the same low dielectric constant film 42 of Steiner, the nitrogen-containing insulating film 30 would still be exposed on the inner surface of the hole before the trench is formed, leaving any such modification of Steiner subject to the aforementioned drawbacks and thus devoid of any motivation for doing so. Only Applicants have recognized and considered these drawbacks, and conceived of a novel combination that can make it possible to realize obviating said drawbacks.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities", *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the forgoing, it is submitted that the cited prior art does not anticipate the independent claims, nor any claim dependent thereon. The Examiner is directed to MPEP § 2143.03 under the section entitled "All Claim Limitations Must Be Taught or Suggested", which sets forth the applicable standard for establishing obviousness under § 103:

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To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (citing *In re Royka*, 180 USPQ 580 (CCPA 1974)).

In the instant case, the pending rejections do not "establish *prima facie* obviousness of [the] claimed invention" as recited in the pending claims because the proposed combinations fail the "all the claim limitations" standard required under § 103.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as the independent claims are patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejections under 35 U.S.C. § 102/103 be withdrawn.

CONCLUSIONS

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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